

Amendments To The Claims

5 Please amend the claims as follows:

Claims 1-16 (Cancelled)

10 Claim 17 (Currently amended) A dye-based ink-jet ink composition ~~in an aqueous solution comprising:~~

at least one water-soluble dye and,

at least one water-soluble anionic binder,

wherein the at least one anionic binder comprises a polymer having at least one complexing group selected from the group consisting of Ethylene Diamine Tet-
15 racetic Acid, Acetyl Acetate, Maleic Anhydride, Acrylate and combinations thereof;

and wherein, when the ink composition is printed on a medium over an underprinted fixer fluid comprising at least one cationic component, the printed ink composition and the underprinted fixer fluid together form an amorphous, viscous
20 fluid on the medium, the mixture being an amorphous viscous fluid, having a viscosity greater than the ink;

and wherein the at least one cationic component comprises a cationic polyelectrolyte selected from the group consisting of $R_1R_2R_3R_4N^+$; $R_1R_2R_3R_4P^+$ and $R_1R_2R_3R_4As^+$, where R can be H, alkyl or other organic substituent, and
25 wherein the weight average molecular weight of the cationic polyelectrolyte is from 4000 to 2000 and up to 10,000 ~~weight average molecular weight~~;

and wherein the cationic polyelectrolyte is in solution with non-polymeric cations selected from the group consisting of calcium ions, aluminum ions, barium ions, strontium ions, zinc ions, magnesium ions and titanium ions.

30

Claims 18-20 (Cancelled)

Claim 21 (Previously amended) The ink-jet ink composition of Claim 17, wherein the polymer comprises styrene.

35

10982031-1

3

Patent Application
09/702,185

Claim 22 (Previously amended) The ink-jet ink composition of Claim 17, wherein the anionic binder comprises hydrolyzed styrene maleic anhydride.

Claim 23 (Original) The ink-jet ink composition of Claim 17, wherein the at
5 least one dye comprises anionic functional groups.

Claim 24 (Previously amended) The ink-jet ink compositions of Claim 23, wherein the at least one dye having anionic functional groups is selected from the group consisting of sulfonated dyes with non-polar groups, dyes with protonatable
10 groups, dyes with carboxylate groups and dyes with phosphonate groups.

Claim 25 (Original) The ink-jet ink composition of Claim 17, wherein the ink composition further comprises low-molecular weight hydrophilic compounds.

15 Claim 26 (Original) The ink-jet ink composition of Claim 25, wherein the low-molecular weight hydrophilic compounds are selected from the group consisting of inorganic salts and lower alcohols.

Claim 27 (Currently amended) An underprinting fixer fluid comprising:
20 at least one cationic component,
wherein the at least one cationic component comprises a cationic polyelectrolyte selected from the group consisting of $R_1R_2R_3R_4N^+$, $R_1R_2R_3R_4P^+$ and $R_1R_2R_3R_4As^+$, where R can be H, alkyl or other organic substituent, and wherein
25 the weight average molecular weight of the cationic polyelectrolyte is over 1000 and from 2000 up to 10,000 weight average molecular weight;
and wherein the cationic polyelectrolyte is in solution with non-polymeric cations selected from the group consisting of calcium ions, aluminum ions, barium ions, strontium ions, zinc ions, magnesium ions and titanium ions;

10982031-1

4

Patent Application
09/702,185

and wherein, when an ink-jet ink composition in an aqueous solution comprising at least one water-soluble dye and at least one water-soluble anionic binder is printed on a portion of a medium underprinted with the fixer fluid, the ink composition and the fixer fluid together form an amorphous viscous fluid, the viscous fluid having a viscosity greater than the ink;

and wherein the at least one anionic binder comprises a polymer having at least one complexing group selected from the group consisting of Ethylene Diamine Tetracetic Acid, Acetyl Acetate, Maleic Anhydride, Acrylate and combinations thereof.

Claims 28-29 (Cancelled)

Claim 30 (Previously amended) The underprinting fixer fluid of claim 27, wherein the polyelectrolyte comprises at least one branched polymer chain.

Claim 31 (Cancelled)

Claim 32 (Previously amended) The underprinting fixer fluid of Claim 27, wherein the cationic polyelectrolyte is a tetrasubstituted ammonium salt.

Claim 33-49 (Cancelled)

Claim 50 (Previously added) The underprinting fixer fluid of Claim 27, wherein the polymer comprises styrene.

Claim 51 (Previously added) The underprinting fixer fluid of Claim 27, wherein the anionic binder comprises hydrolyzed styrene maleic anhydride.

Claim 52 (Previously added) The underprinting fixer fluid of Claim 27, wherein the at least one dye comprises anionic functional groups.

10982031-1

5

Patent Application
09/702,185

Claim 53 (Previously added) The underprinting fixer fluid of Claim 52, wherein the at least one dye having anionic functional groups is selected from the group consisting of sulfonated dyes with non-polar groups, dyes with protonatable groups, dyes with carboxylate groups and dyes with phosphonate groups.

5

Claim 54 (Previously added) The underprinting fixer fluid of Claim 27, wherein the ink composition further comprises low-molecular weight hydrophilic compounds.

10 Claim 55 (Previously added) The underprinting fixer fluid of Claim 54, wherein the low-molecular weight hydrophilic compounds are selected from the group consisting of inorganic salts and lower alcohols.

15 Claim 56 (Previously added) The ink-jet ink composition of Claim 17, wherein the cationic polyelectrolyte comprises at least one branched polymer chain.

Claim 57 (Previously added) The ink-jet ink composition of Claim 17, wherein the cationic polyelectrolyte is a tetrasubstituted ammonium salt.

20